

**A DETAILED SURVEY OF WATER BODIES AND STUDY OF PH AND  
CONDUCTIVITY OF WATER AT INDUKURPETA MANDALAM,  
NELLORE DISTRICT (RICE BOWL) OF  
ANDHRA PRADESH, INDIA**

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**ABSTRACT**

*Detailed survey of water bodies of Indukurpeta Mandalam, Nellore District (Rice bowl) of Andhra Pradesh, Republic of India was conducted survey, extent of water, essential parameters like physical characteristics like pH was recorded. Fourteen water bodies were found spread in several acres. Water bodies existence is never been recorded and this paper delineates the current standing of water body and also the quality of water.*

**KEYWORDS:** Nellore District, Chittoor District, pH, GPS, Conduction, Toxins, Small & Macro Nutrient

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**INTRODUCTION**

Soil and water are nature's gift to nurture the plants, which intern nourishes the living floral community. Recent time's soil and water as become a pool for varied, toxins, man-made non-degradable chemicals, heavy metals etc. Soil has been contaminated altogether potential contaminant means; contaminated water being reservoirs of chemicals significant heavy metals let this chemical, percolate into the soil. Contaminated air carrying all the poisonous substances further worsens the scenario. Human population explosion, speedy industrial enterprise, accumulated deforestation, unplanned urbanization, scientific and technological advancement etc. have additional hyped all types of pollution Narendra Kuppan.(2012).

Water associated soil becomes essential for growth of flora and fauna in any environment as plants become the first supply of energy and basic of an ecosystem, all living organisms are dependent on them, no organism will board luxury if the flora of the surroundings aren't taken care.

Growth of flora depends on water and soil these are the natural resources ought to be preserved, richness ought to be documented to understand the suitability of plants to be grown in these surroundings. There's no documented record several} of those valuable resources in many developing countries.

At many instances indefinable, unheeded destruction and human settlements have occurred within the places of this natural habitat of ponds, pools, lakes. These water bodies over human civilization have become nonexistent gradually.

Nellore district is termed rice bowl of Andhra Pradesh. Nellore district is known for rice cultivation agriculture is pre dominant attributable to fertile soil and water resources. This paper details the water body at Vidavalur Mandalam at Nellore district.

## **STUDY AREA**

Nellore District, the south Coastal District of Andhra Pradesh lies between 13-30' and 15-6' of the Northern latitude and 70-5' and 80-15' of the eastern line of longitude and increasing over a neighbourhood of 13076 Sqkms, accounting for four to seventy five percent of the entire space of the state. It's delimited on the north by Prakasam District on the East by Bay of Bengal on the South by Chittoor District and Chengalpattu District of Tamilnadu and on the West by Veligonda Hills that separate it from Kadapa District.

Revenue, Administratively the District is split into forty six Mandals, covering 5 Revenue Divisions with Head Quarters at Nellore, Gudur, Kavali, Atmakur and Naidupeta. There are 5 Municipalities -Gudur, Kavali Venkatagiri, Atmakur and Sullurpet and one Municipal Corporation i. e. Nellore. The district generally two natural divisions from North to South. The eastern half the district adjoins coastal belt is fairly fertile and therefore the western half the district has low elevation towards west with massive track of low woody plant jungles heterogeneous with rocky stony plains. The Pennar and Swarnamukhi are the principal rivers, besides the streams like Kandaleru and Boggeru.

## **CLIMATE AND RAIN FALL**

The climate of Nellore city is usually dry and salubrious. April and may are the most popular months and therefore the hot winds usually last until the end of the June because the Bay of Bengal is at a distance of fifteen miles from the town, the ocean breeze renders the climate of the town moderate each in winter and in summer. The hottest day falls in May with some shift to June throughout. Some years the coolest day falls between the months of December and February. The southwest Monsoon isn't vital for this city. Winds are from the west and North – West during this season. This city and region depends chiefly on the North – East monsoon. The North – East monsoon happens on the East Coast of India throughout the month of Oct and continues until December this period offers about sixty minutes annual downfall. The conventional downfall of the District is 1080 millimetres.

## **LAND USE**

The total geographical region of the District is thirteen to eight lakh hectares. Of this 20.09% is forest space. The remainder is distributed among Barren and uncultivable land (10.56%) and Land put into Non Agricultural uses (18.68%).

## **MATERIALS AND METHODS**

A survey was conducted at Vidavalur Mandalam at Nellore district the survey variety hectors of water body was obtained and water sample was collected in non-reactive Thermo Scientific Nalgene Certified Wide-Mouth

Amber HDPE bottle with Closure and brought to the laboratory and hydrogen ion concentration was measured using digital pH scale meter and conductivity was measured exploitation Ellico CM180 conductivity meter.

## RESULTS AND DISCUSSIONS

**Table 1**

S. No	Name of Water body	Water Body type	Village / Mandalam	Survey No	Mandalam	Extent in acre	GPS		pH	Conductivity/ $\mu\text{S}/\text{cm}^{-1}$	Remarks
							Latitude	Longitude			
1	ChakalaGunta	Gunta	Leburu	381	IndukurpetaMandalam	0.52	N:14.30.341	E:080.05.321	6.5	17.31	
2	RaavulaDoruvu	Gunta	Leburu	360-A1	IndukurpetaMandalam	1.83	N:14.30.423	E:080.05.201	7	18.12	
3	NallaGundam	Gunta	Leburu	164-B	IndukurpetaMandalam	1.04	N:14.30.935	E:080.04.485	6.8	14.46	
4	TummalaDoruvu	Gunta	Leburu	149-A	IndukurpetaMandalam	1.83	N:14.31.050	E:080.04.576	6.5	13.38	
5	PallolaDoruvu	Gunta	Leburu	237-B	IndukurpetaMandalam	2.07	N:14.30.345	E:080.04.718	6.3	18.13	Lotus in the pond
6	RangadiDoruvu	Gunta	Leburu	509	IndukurpetaMandalam	0.99	N:14.29.834	E:080.05.262	6.9	19.36	Occupied for fish culture
7	PallepaduCheruvu	Cheruvu	Pallepadu	65	IndukurpetaMandalam	7.15	N:14.30.483	E:080.04.131	6.1	16.87	Occupied for Agriculture
8	OntirevuGunta	Gunta	Pallepadu	165	IndukurpetaMandalam	1.63	N:14.30.989	E:080.03.970	6.4	18.69	
9	BodipapaiahDoruvu	Gunta	Nidimusali	170	IndukurpetaMandalam	0.37	N:14.31.780	E:080.05.570	6.0	17.54	
10	MudivarthipalemCheruvu	Cheruvu	MudivartiPalem	165, 176	IndukurpetaMandalam	91.65, 86.05	N:14.31.566	E:080.07.042	6.7	18.26	Fully Occupied for Fish culture
11	MudivarthipalemGunta	Gunta	MudivartiPalem	181	IndukurpetaMandalam	0.41	N:14.31.435	E:080.07.072	6.5	18.48	
12	PunnuruDoruvu	Gunta	Punnuru	53	IndukurpetaMandalam	0.51	N:14.30.537	E:080.06.199	6.8	14.46	Pond belongs to farmers
13	PulimittaDoruvu	Gunta	Punnuru	223	IndukurpetaMandalam	0.85	N:14.30.211	E:080.05.920	6.8	13.56	
14	PunnuruCheruvu	Cheruvu	Punnuru	262	IndukurpetaMandalam	14.83	N:14.30.003	E:080.06.013	6.8	15.48	

14 different Gunta/Cheruvu are identified and the GPS was recorded and pH and conductivity were noted. The “p” in the word pH stands for potential and the “H” stands for Hydrogen. A measure of acidity or pH of water soluble substances (pH stands for 'potential of Hydrogen'). A hydrogen ion concentration value could be a range from one to fourteen, with seven as the middle (neutral) point. Values below 7 indicate acidity above seven alkalinity and 7 is neutral. All the water samples examined are neutral. Conductivity of water is the water's ability to conduct electricity. Common ions in water that conduct electrical current embody Na, chloride, calcium, and magnesium because dissolved salts and different inorganic chemicals conduct electrical current, conductivity will increase as salinity increases.

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